L4 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:802391 CAPLUS
DOCUMENT NUMBER: 141:280432
TITLE: Battery including **carbon foam current collectors**
INVENTOR(S): Kelley, Kurtis Chad; Votoupal, John J.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 11 pp., Cont.-in-part of U.S. Ser. No. 183,471.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004191632	A1	20040930	US 2004-798875	20040312
US 2004002006	A1	20040101	US 2002-183471	20020628
PRIORITY APPLN. INFO.:			US 2002-183471 A2	20020628

AB A battery has a **current collector** constructed of **carbon foam**. The **carbon foam** includes a network of pores into which a chemical active material is disposed to create either a pos. or neg. plate for the battery. The **carbon foam** resists corrosion and exhibits a large amount of surface area. The invention includes a method for making the disclosed **carbon foam current collector** used in the battery.

L4 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:513096 CAPLUS
DOCUMENT NUMBER: 141:40778
TITLE: Battery having **carbon foam current collector**
INVENTOR(S): Kelley, Kurtis C.; Ostermeier, Charles F.; Maroon, Matthew J.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004121238	A1	20040624	US 2002-326257	20021223
PRIORITY APPLN. INFO.:			US 2002-326257	20021223

AB A battery cell includes a neg. **current collector** and at least one **carbon foam** pos. **current collector** disposed within the cell such that the neg. **current collector** at least partially surrounds the at least one **carbon foam** pos. **current collector**. An insulating mat is disposed between the neg. **current collector** and the at least one **carbon foam** pos. **current collector**.

L4 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:513095 CAPLUS
DOCUMENT NUMBER: 141:57111
TITLE: Composite material and current collector for battery
INVENTOR(S): Kelley, Kurtis C.; Ostermeier, Charles F.; Maroon, Matthew J.
PATENT ASSIGNEE(S): USA

SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004121237	A1	20040624	US 2002-324068	20021220
WO 2004062005	A2	20040722	WO 2003-US35722	20031110
WO 2004062005	A3	20041111		

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2002-324068 A 20021220

AB A composite material includes a first carbon foam structure including a network of pores and a second carbon foam structure including a network of pores. An intermediate bonding structure is disposed at least in part between the first and second carbon foam structures.

L4 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:3546 CAPLUS
DOCUMENT NUMBER: 140:44769
TITLE: Battery including **carbon foam current collectors**
INVENTOR(S): Kelley, Kurtis Chad; Votoupal, John J.
PATENT ASSIGNEE(S): Caterpillar Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004002006	A1	20040101	US 2002-183471	20020628
WO 2004004027	A2	20040108	WO 2003-US16262	20030522
WO 2004004027	A3	20040610		

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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2004191632	A1	20040930	US 2004-798875	20040312

PRIORITY APPLN. INFO.: US 2002-183471 A 20020628

AB A battery has a **current collector** constructed of **carbon foam**. The **carbon foam** includes a network of pores into which a chemical active paste is disposed to create either a pos. or neg. plate for the battery. The **carbon foam** resists corrosion and exhibits a large amount of surface area.

The invention includes a method for making the disclosed **carbon foam current collector** used in the battery.

L4 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1979:94477 CAPLUS
DOCUMENT NUMBER: 90:94477
TITLE: Electrode with a graded electrical resistance substrate
INVENTOR(S): Will, Fritz G.
PATENT ASSIGNEE(S): General Electric Co., USA
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 4133738	A	19790109	US 1977-816480		19770718
PRIORITY APPLN. INFO.:			US 1977-816480	A	19770718

AB In order to achieve uniform Zn deposition in electroplating and for Zn cells, an electrode is described which includes a current collector and a porous conducting substrate with the elec. resistance of the conducting substrate varied generally by a shaped structure resulting in low and high elec. resistance portions. Thus, an electrode was formed from a Cu foil current collector and a porous conducting substrate of C foam in elec. contact with the porous substrate having an upper portion of thickness .apprx.5 mm with low resistance and tapered to a thickness of .apprx.1 mm and high elec. resistance. Thus a porous substrate was the neg. terminal for Zn electroplating at 10 mA/cm2 with a Zn foil 2nd electrode and a bath of ZnBr2 28.6, KBr 14.3, and NaCl 14.3%. After 16 h electrolysis, a more uniform Zn electroplate was obtained than would have been obtained using a conventional electrode.

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(FILE 'HOME' ENTERED AT 15:41:50 ON 11 MAR 2005)

FILE 'CAPLUS' ENTERED AT 15:42:33 ON 11 MAR 2005
L1 4 S (CARBON FOAM) (S) (CURRENT COLLECTOR)
L2 3 S L1 AND LEAD
L3 874 S (CARBON (2W) FOAM)
L4 5 S L3 (P) (CURRENT COLLECTOR)